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10/718,420	11/20/2003	Brian Jeffrey Corcoran	TUC920030130US1	9652

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EXAMINER	
CHANNAVAJJALA, SRIRAMA T	
ART UNIT	**PAPER NUMBER**
2166	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/05/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/718,420	CORCORAN ET AL.	
	Examiner	Art Unit	
	Srirama Channavajjala	2166	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 January 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) *1-15,17-22,24,26-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15,17-22,24,26-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to RCE

1. Claims 1-15,17-22,24,26-40 are presented for examination.

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed 1/19/2007 in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/19/2006 has been entered and a non-final Office action, as stated below.

3. Claims 1,13,17-18,26 have been amended [12/19/2006].

4. Claims 16,23,25 have been cancelled [12/19/2006].

5. Examiner acknowledges applicant's amendment filed on 8/25/2006.

6. Claims1, 13,18,27,40 have been amended [8/25/2006].

Drawings

7. The Drawings filed on 11/20/2003 are acceptable for examination purpose

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. *Claims* **1-15,17-22,24,26-40** *are rejected under 35 U.S.C. 101 because invention is directed to non-statutory subject matter.*

As set forth in MPEP 2106(II)A:

Identify and understand Any Practical Application Asserted for the Invention The claimed invention as a whole must accomplish a practical application. That is, it must produce a "useful, concrete and tangible result." State Street, 149 F.3d at 1373, 47USPQ2d at 1601-02. The purpose of this requirement is to limit patent protection to inventions that possess a certain level of "real world" value, as opposed to subject matter that represents nothing more than an idea or concept, or is simply a starting point for future investigation or research (Brenner v. Manson, 383 U.S. 519, 528-36, 148 USPQ 689, 693-96); In re Ziegler, 992, F.2d 1197, 1200-03, 26 USPQ2d 1600, 1603-06 (Fed. Cir. 1993)). Accordingly, a complete disclosure should contain some indication of the practical application for the claimed invention, i.e., why the applicant believes the claimed invention is useful.

Apart from the utility requirement of 35 U.S.C. 101, usefulness under the patent eligibility standard requires significant functionality to be present to satisfy the useful result aspect of the practical application requirement. See Arrhythmia, 958 F.2d at 1057, 22 USPQ2d at 1036. Merely claiming nonfunctional descriptive material ***stored in a computer-readable medium does not make the invention eligible for patenting****. For example, a claim directed to a word processing* ***file stored on a disk may satisfy the utility*** *requirement of 35 U.S.C. 101 since the information stored may have some* ***"real world"*** *value. However, the mere fact that the claim may satisfy the utility requirement of 35 U.S.C. 101* ***does not mean that a useful result is achieved under the practical application requirement. The claimed invention as a whole must produce a "useful, concrete and tangible" result to have a practical application****.*

9. Regarding claim 1, " A self-descriptive binary data structure stored on a computer readable storage medium for communicating binary data, between a source device and a target device, the data structure comprising:

a plurality of data segments, each of the plurality of data segments comprising a segment header and a data field, the segment header ' descriptive of the corresponding data segment;

.a target data set within the data field; and

a data structure descriptor descriptive of the data structure, the data structure descriptor identifying the location of the target data set within the data field.",
is directed to "abstract idea" because all of the elements in the claim 1 would reasonably be interpreted by one of ordinary skill in light of the disclosure at page 10, 0037-0038, page 11-page 13, 0049 as software, such that self-descriptive binary data structure steps is software, per se , is "non-statutory subject matter" and ***claim 1*** do not have "practical application" because the "final result" by the claimed invention in the claim 1 elements particularly "*a data structure descriptor descriptive of the data structure, the data structure descriptor identifying the location of the target data set within the data field*" merely code or instructions or a data structure [*the IEEE definition of which can be found in the Interim Guidelines, Annex IV, page 50, and the in MPEP 2106]*, or merely non-functional descriptive material for example data or non-functional arrangement of data structure but not producing "useful, tangible and concrete" result, therefore ,claim 1 is a non-statutory subject matter. The claimed invention is subject to the test of State Street, 149 F.3d at 1373-74, 47 USPQ2d at 1601-02. Specifically State

Street sets forth that the claimed invention must produce a ***"useful, concrete result."*** The **Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility** states in section IV C. 2 b. (2) (on page 21 in the PDF format):

> The tangible requirement does not necessarily mean that a claim must either be tied to a particular machine or apparatus or must operate to change articles or materials to a different state or thing. However, the tangible requirement does require that the claim must recite more than a § 101 judicial exception, in that the process claim must set forth a practical application of that § 101 judicial exception to produce a real-world result. Benson, 409 U.S. at 71-72, 175 USPQ at 676-77 (invention ineligible because had "no substantial practical application.").

If, Claim 1 have the result of producing "real-world" results related to *a data structure descriptor descriptive of the data structure, the data structure descriptor identifying the location of the target data set within the data field",* however the claims do not specify that the result (*data structure descriptor descriptive of the data structure, the data structure descriptor identifying the location of the target data set within the data field*) neither displayed, outputted or at least stored to a user or otherwise used in the real world Thus the claimed result is producing useful "real-world" results.

The court in State Street noted that the claimed invention in Alappat constituted a practical application of an abstract idea because it produced *a useful, concrete and tangible result* the display of a smoothed heart beat to a system user. The Federal Circuit further ruled that it is of little relevance whether a claim is directed to a machine

or process for the purpose of a § 101 analysis. AT&T, 172 F.3d at 1358, 50 USPQ2d at 1451 (see the Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility, Annex II).

The examiner reviewed the specification page 10, 0037-0038, page 11-page 13, 0049, but was unable to find a practical real-world use of the result . If the applicant is able to find one and inserts it into the claims provide the location the element[s] is found in the specification.

In view of above analysis of claims 2-12 depend from claim 1 is also rejected

10. Regarding claim 29, 40 "A method for communicating binary data using a self-descriptive binary data structure, the method comprising:

generating a plurality of data segments, each of the plurality of data segments comprising a segment header and a data field, the segment

header descriptive of the corresponding data segment;

attaching a data structure descriptor to the plurality of data segments, the data structure descriptor descriptive of the data structure;

identifying a target data set within the data field; and

storing a location of the target data set in the data structure descriptor". And sending the self-descriptive binary data structure to a target ", is directed to "abstract idea" because all of the elements in the claim 29,40 would reasonably be interpreted by

one of ordinary skill in light of the disclosure as software, such that method for communicating binary data using a self-descriptive binary data structure steps is software, per se , is "non-statutory subject matter" and ***claim,29,40*** do not have "practical application" because the "final result" by the claimed invention in the claim 18,29,40 elements particularly "*attaching a data structure descriptor to the plurality of data segments, the data structure descriptor descriptive of the data structure; identifying a target data set within the data field; and storing a location of the target data set in the data structure descriptor*" merely storing location of the target data set in the data structure" is a code or instructions or a data structure [*the IEEE definition of which can be found in the Interim Guidelines, Annex IV, page 50, and the in MPEP 2106]*, or merely non-functional descriptive material for example data or non-functional arrangement of data structure but not producing "***useful, tangible and concrete***" result, therefore ,claim 18,29,40 is a ***non-statutory subject matter***.

The claimed invention is subject to the test of State Street, 149 F.3d at 1373-74, 47 USPQ2d at 1601-02. Specifically State Street sets forth that the claimed invention must produce a ***"useful, concrete and tangible result."*** The **Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility** states in section IV C. 2 b. (2) (on page 21 in the PDF format):

> The tangible requirement does not necessarily mean that a claim must either be tied to a particular machine or apparatus or must operate to change articles or materials to a different state or thing. However, the tangible requirement does require that the claim must recite more than a § 101 judicial

exception, in that the process claim must set forth a practical application of that § 101 judicial exception to produce a real-world result. Benson, 409 U.S. at 71-72, 175 USPQ at 676-77 (invention ineligible because had "no substantial practical application.").

[If] Claim, 29,40 have the result of producing "real-world" results related to "attaching a data structure descriptor to the plurality of data segments, the data structure descriptor descriptive of the data structure; identifying a target data set within the data field; and storing a location of the target data set in the data structure descriptor", however the claims do not specify that the result , but merely storing location of the target data set in the data structure descriptor or otherwise used in the real world, furthermore, no *use of* "storing location of the target data set in the data structure descriptor" is set forth that would constitute a real-world result. Thus the claimed result is not tangible and thus the claimed result is not a "**useful, concrete result**." The court in State Street noted that the claimed invention in Alappat constituted a practical application of an abstract idea because it produced *a useful, concrete and tangible result* the display of a smoothed heart beat to a system user. The Federal Circuit further ruled that it is of little relevance whether a claim is directed to a machine or process for the purpose of a § 101 analysis. AT&T, 172 F.3d at 1358, 50 USPQ2d at 1451 (see the Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility, Annex II).

The examiner reviewed the specification page 11, 0039-0041, page 12-17, but was unable to find a practical real-world use of the result. If the applicant is able to find

one and inserts it into the claims provide the location the element[s] is found in the specification.

In view of above analysis of claims 30-39 depend from claim, 29 respectively is also rejected

In the above analysis, claims 18-26 are also rejected.

Note: Claim 1,13, 29-36,: examiner reviewed the specification but unable to find support for ***"computer readable storage medium"*** , applicant merely amended the specification at 0050 without describing or defining "computer readable storage medium".

11. Regarding claim 27, "A method for communicating binary data, the method comprising:

providing a self-descriptive binary data structure at a source communications device, the self-descriptive binary data structure having a customizable directory descriptor, the customizable descriptor configured to provide a directory of the data stored in each of the data fields within the data structure;

communicating the self-descriptive binary data structure between source communication device and a target communication device via a communications network; and'

processing the self-descriptive binary data structure at the target communications device;;

executing a bootstrap executable, the bootstrap executable configured to reference the customizable directory descriptor and to identify a location of a second target data set within the data structure using the customizable directory descriptor", is directed to "abstract idea" because all of the elements in the claim 27 would reasonably be interpreted by one of ordinary skill in light of the disclosure as software, such that method for communicating binary data providing a self-descriptive binary data structure steps is software, per se , is "non-statutory subject matter" and ***claim 27*** do not have "practical application" because the "final result" by the claimed invention in the claim 27 elements particularly "*executing a bootstrap executable, the bootstrap executable configured to reference the customizable directory descriptor and to identify a location of a second target data set within the data structure using the customizable directory descriptor*" merely executing code or instructions or a code within data structure [*the IEEE definition of which can be found in the Interim Guidelines, Annex IV, page 50, and the in MPEP 2106]*, or merely non-functional descriptive material for example data or non-functional arrangement of data structure but not producing "***useful, and concrete***" result, therefore ,claim 27 is a ***non-statutory subject matter***. The claimed invention is subject to the test of State Street, 149 F.3d at 1373-74, 47 USPQ2d at 1601-02. Specifically State Street sets forth that the claimed invention must produce a ***"useful, concrete and tangible result."*** The **Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility** states in section IV C. 2 b. (2) (on page 21 in the PDF format):

> The tangible requirement does not necessarily mean that a claim must either be tied to a particular machine or apparatus or must operate to change articles or materials to a different state or thing. However, the tangible requirement does require that the claim must recite more than a § 101 judicial exception, in that the process claim must set forth a practical application of that § 101 judicial exception to produce a real-world result. Benson, 409 U.S. at 71-72, 175 USPQ at 676-77 (invention ineligible because had "no substantial practical application.").

[If] Claim 27 have the result of producing "real-world" results related to "*executing a bootstrap executable, the bootstrap executable configured to reference the customizable directory descriptor and to identify a location of a second target data set within the data structure using the customizable directory descriptor",* however the claims do not specify that the result (executing a bootstrap executable.....) neither displayed nor outputted to a user or otherwise used in the real world, furthermore, no *use of "executing a bootstrap executable, the bootstrap executable configured to reference the customizable directory descriptor and to identify a location of a second target data set within the data structure using the customizable directory descriptor"* is set forth that would constitute a real-world result. Thus the claimed result is not tangible and thus the claimed result is not a "**useful, concrete result**." The court in State Street noted that the claimed invention in Alappat constituted a practical application of an abstract idea because it produced *a useful, concrete and tangible result* the display of a smoothed heart beat to a system user. The Federal Circuit further ruled that it is of little relevance whether a claim is directed to a machine or process for the purpose of a § 101 analysis. AT&T, 172 F.3d at 1358, 50 USPQ2d at

1451 (see the Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility, Annex II).

The examiner reviewed the specification page 11, 0039-0041, pae 12-17, but was unable to find a practical real-world use of the result. If the applicant is able to find one and inserts it into the claims provide the location the element[s] is found in the specification.

In view of above analysis of claim28 depend from claim 27 is also rejected.

For "General Analysis for Determining Patent-Eligible Subject Matter", see 101 Interim Guidelines as indicated below:

<<http://www.uspto.gov/web/offices/pac/dapp/ogsheet.html>>

see MPEP 8th edition, Rev 5, Aug 2006

No new matter should be entered

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claim 1,13, 29-36 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

13. Claims 1,13, 29-36 preamble is directed to "computer readable storage medium". It is not clear what is meant by "computer readable storage medium", as amended [spec 0050] without describing, defining in the specification, further for compact prosecution, examiner assumes, and treated "computer readable storage medium" corresponds to any physical medium for example computer disk[s], or computer hard drive and like.

14. As to claim 13, preamble reads " A system for communicating....."***capable of being*** stored in a computer readable storage medium... is being indefinite because "data structure" do not actually stored in a computer readable storage medium.

15. Further, in claim 40, Applicant appear to be invoking 112, sixth paragraph "means for" type language, but it is unclear what structure[s] are being used to perform the functions. No particular structure[s] are identified in the specification that would perform the function. The claim does not require any hardware, software, input, out etc., The claims merely require a "data structure" and means for manipulating the "data

structure". One of skill in the art would not be appraised of what structure[s] are intended to be encompassed by the claim. Nor would it be clear what the structure[s] are intended to accomplish.

Claim Rejections - 35 USC § 102

16. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

17. Claims 1-14,17-22,26-27,29-36,38-40 are rejected under 35 U.S.C. 102(e) as being anticipated by Sharon et al. [hereafter Sharon], US Publication No. 20030229707 filed on June 6, 2002, published on Dec 11,2003.

18. As to claim 1, Sharon teaches a system which including 'a self-descriptive binary data structure stored on a computer readable storage medium [page 3, col 1, claim 6]]for communicating binary data, between a source device and a target device [fig 1] the data structure ' [fig 5, page 2, col 1, 0022, line 1-2, 0026, line 1-4,], self-descriptive binary data structure corresponds to Sharon's fig 5, s-records, because "s-records" are essentially character strings made of several fields which identify the record type, record

length, memory address, code, data and checksum, furthermore, each byte of binary data is encoded as a 2-character hexadecimal number is part of the S-record data structure [page 2, 0016-0019]; It is further noted that Sharon specifically suggests "data structure on a computer readable medium" as detailed in page 3, col 1; communicating binary data between source device and a target device corresponds to host computer communicating with target system over a communication link as detailed in fig 1;

'a plurality of data segments, each of the plurality of data segments comprising a segment header and a data field, the segment header ' descriptive of the corresponding data segment' [page 2, col 1, 0015, line 2-5], Sharon specifically teaches records holding a description of file or a data containing program code in a specific location or address, further data segment typically one of the section of data or code as detailed in page 2, col 1, 0015;

'a target data set within the data field [page 2, col 1, line 3-5], target data set corresponds to target system where data to be loaded as detailed in page 2, col 1, line 3-5;

a data structure descriptor descriptive of the data structure, the data structure descriptor identifying the location of the target data set within the data field ' [page 2, col 1, 0020], .Sharon specifically teaches memory address for each S- record is part of the data structure that identifying the start address, further descriptor or header is integral part of memory.

19. As to claim 2, Sharon disclosed 'a customizable directory descriptor, the customizable descriptor configured to provide a directory of the data stored in each of the data fields within the data structure [page 2, col 1, 0021].

3. As to claim 3, Sharon disclosed 'wherein the target data set comprises a bootstrap executable, the bootstrap executable configured to reference the customizable directory descriptor and to identify a location of a second target data. set within the data structure using the customizable directory descriptor' [page 1, col 1, 0004, page 2, col 1, 0021].

20. As to claim 4, Sharon disclosed wherein the bootstrap executable is further configured to access the second target data set within the data structure' [page 1, col 1, 0004].

21. As to claim 5, Sharon disclosed ' a data structure version descriptor configured to indicate a version of the data structure' [page 1, col 1, 0003].

22. As to claim 6, Sharron disclosed ' a data structure name descriptor configured to indicate a name of the data structure' [page 1, col 2, 0013, line 1-2]

23. As to claim 7, Sharon disclosed, 'a data structure type descriptor configured to indicate a type of the data structure' [page 1, col 2, 0013]..

24. As to claim 8, Sharon disclosed ' a data structure count descriptor configured to indicate a number of the plurality of data segments within the data structure' [page 2, col 1, 0015, line 2-5].

25. As to claim 9, Sharon disclosed ' the target data set is an executable' [page 1, col 1, 0004]..

26. As to claim 10, Sharon disclosed 'the target data set is a code image' [page 1, col 2, 0012, line 8-16], code image corresponds to Sharon's "Intel standard Hex files" used to burn the program into EPROM,PROM as detailed in page 1, col 2, 0012, line 8-16]

27. As to claim 11, Sharon disclosed 'one of the plurality of data segments is an alignment data segment configured to align the size of the data structure for at least one of error detection and correction' [page 1, col 2, 0014].

28. As to claim 12, 35, Sharon disclosed the data segment header comprises a flag field configured to store a flag, the flag descriptive of the data stored in the data field' [page 2, col 1, 0022].

29. As to claim 13, Sharon teaches a system which including 'a system for communicating binary data using a self-descriptive binary data structure' [page 1, col 1, 0009, col 2, 0012, line 1-3, fig 1, fig 5], Sharon teaches exchange of programs and data

between computer systems, more specifically , files typically include ASCII encodings of hex instruction codes for transmission over a data link for example using RS-232 [see 0003], data structure corresponds to S-record or HEX record data structure as detailed in page 1, 0009;

'the system comprising: a communications channel' [page 1, col 1, 0003, line 12-13, fig 1, col 2, line 1-3, element 104, communications channel corresponds to communications link as detailed in fig 1, element 104;

'a source communication device connected to the communications channel and configured to transmit a self-descriptive binary data structure, and a target communication device connected to the source communications device via the communications channel and configured to receive the self-descriptive binary data structure from the source communication device' [fig 1, page 1, col 2, 0012], Sharon specifically teaches host and target computer system are connected through communication link, further both host and target system loading, checking and parsing programs received over communication link, further Sharon specifically suggests S-record and Intel HEX formats and other text based formats for transport of programs and data to embedded target system, that corresponds to configured to receive the self-descriptive binary data structure from the source communication device;

self-descriptive binary data structure corresponds to Sharon's fig 5, s-records, because "s-records" are essentially character strings made of several fields which identify the record type, record length, memory address, code, data and checksum, furthermore, each byte of binary data is encoded as a 2-character hexadecimal number

is part of the S-record data structure [page 2, 0016-0019]; It is further noted that Sharon specifically suggests "data structure on a computer readable medium" as detailed in page 3, col 1, claim 6; communicating binary data between source device and a target device corresponds to host computer communicating with target system over a communication link as detailed in fig 1;

'a plurality of data segments, each of the plurality of data segments comprising a segment header and a data field, the segment header ' descriptive of the corresponding data segment' [page 2, col 1, 0015, line 2-5], Sharon specifically teaches records holding a description of file or a data containing program code in a specific location or address, further data segment typically one of the section of data or code as detailed in page 2, col 1, 0015;

.a target data set within the data field [page 2, col 1, line 3-5], target data set corresponds to target system where data to be loaded as detailed in page 2, col 1, line 3-5;

a data structure descriptor descriptive of the data structure, the data structure descriptor configured to identify the location of the target data set within the data field ' [page 2, col 1, 0020], .Sharon specifically teaches memory address for each S- record is part of the data structure that identifying the start address, further descriptor or header is integral part of memory.

30. As to the claim 14, Sharon disclosed 'wherein the source communication device is further configured to generate the self-descriptive binary data structure' [page 1, col 2, 0012, line 8-10]..

31. As to claim 17, Sharon disclosed ' wherein the executable comprises a bootstrap executable, the bootstrap executable configured to access a code image within the data structure' [page 1, col 1, 0004].

32. As to claim 18, Sharon teaches a system which including 'a method for communicating binary data using a self-descriptive binary data structure' [fig 5, page 2, col 2, col 1, 0022, line 1-2, 0026, line 1-4], self-descriptive binary data structure corresponds to Sharon's fig 5, S-records, because "s-records" are essentially character strings made of several fields which identify the record type, record length, memory address, code, data and checksum, furthermore, each byte of binary data is encoded as a 2-character hexadecimal number is part of the S-record data structure [page 2, 0016-0019];

'generating a self descriptive binary data structure comprising: a plurality of data segments, each of the plurality of data segments comprising a segment header and a data field, the segment header descriptive of the corresponding data segment ' [page 2, col 1, 0015, line 2-5], Sharon specifically teaches records holding a description of file or a data containing program code in a specific location or address, further data segment typically one of the section of data or code as detailed in page 2, col 1, 0015; self-

descriptive binary data structure corresponds to Sharon's fig 5, S-records because "s-records" are essentially character strings made of several fields which identify the record type, record length, memory address, code, data and checksum, furthermore, each byte of binary data is encoded as a 2-character hexadecimal number is part of the "s-record" data structure [page 2, 0016-0019];

'a target data set within the data field'[page 2, col 1, line 3-5], target data set corresponds to target system where data to be loaded as detailed in page 2, col 1, line 3-5;

'a data structure descriptor to the plurality of data segments, the data structure descriptor descriptive of the data structure' [page 1, col 2, 0014-0015, fig 2], Sharon specifically suggests each s-record file is individually identified and labeled for example type, record length, address, code/data and checksum is part of the descriptive of the data structure; further, as best understood by the examiner, typically "segments" are part of the memory because memory associated with a process that can contain dynamically allocated data for example as detailed in fig 2, the first S-record has a data start address, the data is to be loaded sequentially into memory [page 2, col 1, 0020, line 4-11]

'communicating the self descriptive binary data structure with a communications interface coupled with a target device' [fig 1, page 1, col 2, 0012, line 1-8], Sharon specifically teaches "S-record" structure corresponds to self descriptive binary data structure, further, Sharons fig 1 also suggests establishing communication between host

and target computer system, target device corresponds to Sharon's target device element 106;

'processing an executable that is stored in the self-descriptive binary data structure' [page 2, col 1, 0015, line 3-6], Sharon teaches processing S1-S3 records identify the line as containing program code or data as detailed in page 2, 0015.

33. As to claim 29,40, Sharon teaches a system which including 'a method for communicating binary data using a self-descriptive binary data structure' [fig 5, page 2, col 2, col 1, 0022, line 1-2, 0026, line 1-4], self-descriptive binary data structure corresponds to Sharon's fig 5, S-records, because "s-records" are essentially character strings made of several fields which identify the record type, record length, memory address, code, data and checksum, furthermore, each byte of binary data is encoded as a 2-character hexadecimal number is part of the S-record data structure [page 2, 0016-0019];

'generating a plurality of data segments, each of the plurality of data segments comprising a segment header and a data field, the segment header descriptive of the corresponding data segment ' [page 2, col 1, 0015, line 2-5], Sharon specifically teaches records holding a description of file or a data containing program code in a specific location or address, further data segment typically one of the section of data or code as detailed in page 2, col 1, 0015;

'attaching a data structure descriptor to the plurality of data segments, the data

structure descriptor descriptive of the data structure' [page 1, col 2, 0014-0015, fig 2], Sharon specifically suggests each s-record file is individually identified and labeled for example type, record length, address, code/data and checksum is part of the descriptive of the data structure;

'identifying a target data set within the data field'[page 2, col 1, line 3-5], target data set corresponds to target system where data to be loaded as detailed in page 2, col 1, line 3-5;

'storing a location of the target data set in the data structure descriptor' [page 2, col 2, 0025, line 4-5];

'sending the self-descriptive binary data structure to a target' [see fig 1,fig 5, page 1, col 2, 0012, page 2, col 2, 0026], self-descriptive binary data structure corresponds to Sharon's fig 5, s-records, because "s-records" are essentially character strings made of several fields which identify the record type, record length, memory address, code, data and checksum, furthermore, each byte of binary data is encoded as a 2-character hexadecimal number is part of the S-record data structure; further 'sending the self-descriptive binary data structure to a target' corresponds to Sharon's fig 1 [as claim 29, 40].

34. As to claim 19, 30, Sharon disclosed ' storing a customizable directory descriptor and providing a directory of the data stored in each of the data fields within the data structure' [page 2, col 1, 0021].

35. As to claim 20,31, Sharon disclosed 'storing a bootstrap executable and identifying a location of a second target data set within the data structure using the customizable directory descriptor' [page 1, col 1, 0004, page 2, col 1, 0021].

36. As to claim 21, 32,Sharon disclosed ' accessing the second target data set within the data structure' [page 1, col 1, 0004].

37. As to claim 22, 34, Sharon disclosed 'generating the plurality of data segments comprises generating an alignment data segment and aligning the size of the data structure for at least one of error detection and correction' [page 1, col 2, 0014].

38. As to claim 36, Sharon disclosed 'communicating the self descriptive binary data structure between a source communications device and a target communications device' [fig 1, page 1, col 2, 0012, line 1-3].

39. As to claim 38, Sharon disclosed 'processing an executable that is stored in the self-descriptive binary data structure' [page 1, col 2, 0012, line 1-8].

40. As to claim 26, 39,Sharon disclosed ' processing an executable comprises processing a bootstrap executable, the bootstrap executable configured to access a code image within the data structure' [page 1, col 1, 0004].

41. As to claim 27, Sharon teaches a system which including 'a method for communicating binary data' [see fig 1, Abstract]':

'providing a self-descriptive binary data structure at a source communications device' [fig 1, page 1, col 2, 0012, line 1-8], Sharon specifically teaches target and host or source system connected to a communication link as detailed in fig 1, further, Sharon also suggests common formats for transport program particularly, "Intel standard HEX" files as well as s-records [page 1, col 2, 0012],

'self-descriptive binary data structure having a customizable directory descriptor, the customizable descriptor configured to provide a directory of the data stored in each of the data fields within the data structure' [page 2, col 1, 0021], Sharon teaches "binary data structure' particularly referred to as "iAN files", further, typically binary data structure is identified with specific records for example s1,s2,s3 and each record has record length, address portion, code/data portion and like is part of the data structure and directory of the data stored ;

'communicating the self-descriptive binary data structure between source communication device and a target communication device via a communications network' [fig 1 page 1, col 2, 0012, line 1-3, 0013]

'processing the self-descriptive binary data structure at the target communications device executing a bootstrap executable, the bootstrap executable configured to reference the customizable directory descriptor and to identify a location of a second target data set within the data structure using the customizable directory descriptor'[page 1, col 1, 0004, page 2, col 1, 0021, fig 1-2] .

42. As to claim 33, Sharon disclosed 'wherein the data structure descriptor comprises at least one of data structure version descriptor' [page 1, col 1, 0003], 'a data structure name descriptor' [page 1, col 2, 0013, line 1-2], 'a data structure type descriptor' [page 1, col 2, 0013], and a data structure count descriptor' [page 2, col 1, 0015, line 2-5].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
>
> This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

43. ***Claims 15,24,28,37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sharon et al. [hereafter Sharon], US Publication No. 20030229707 filed on June 6, 2002, published on Dec 11,2003 as applied to claim 13,18, 29 above, further in view of Brown, US Patent No. 6839825***

44. As to claim 15,24,28,37 Sharon disclosed 'the source communication device is further configured to generate the self-descriptive binary data structure fig 5; page 2, col 2, col 1, 0022, line 1-2, 0026, line 1-4], however, Sharon does not specifically

teach 'a non-binary data structure'. On the other hand, Brown disclosed "non-binary data structure' [col 1, line 66-67, col 2, line 1-2, fig 2A].

It would have been obvious to one of the ordinary skill in the art at the time of applicant's invention to incorporate the teachings of Brown into rapid file transfer to embedded system of Sharon et al. because both Sharon and Brown specifically teach "binary data structure' [see Sharon: page 2, col 2, 0021, fig 2-3; Brown: col 2, line 33-35], both Sharon and Brown suggests embedded memory system [Sharon: page 1, col 2, 0012, line 1-3; Brown: col 1, line 23-25].

One of the ordinary skill in the art at the time of applicant's invention to incorporate the teachings of Brown into rapid file transfer to embedded system of Sharon et al. because that would have allowed users of Sharon's data structure to implement segments physically mapped into binary memory structure, further portion of the non-binary width data structure stored per logical row in the first binary memory block stores twelve entries, while the width of the entry is 21-bits, the non-binary data structure stores 16 entries and n is 15 [col 2, line 22-32], thus bringing the advantages of minimizing memory required for storing non-binary width data structures as suggested by Brown [col 1, line 58-61].

Response to Arguments

45. Applicant's arguments filed on 1/26/2007 with respect to claims 1-15,17-22,24,26-40 have been fully considered and for examiner's response, see discussion below:

a) At page 14-15, claim 1, applicant argues that claim 1 does produce a real world result, that the claimed invention as a whole accomplishes a practical application.

As to the argument [a], as best understood by the examiner, claim 1 is merely directed to "data structure" having segment header, data filed and merely manipulating "data structure" without "real-world" result. It is further noted that applicant amended specification paragraph 0050 merely adding "computer readable storage medium" without describing and defining "computer readable storage medium" i.e., failed to physical storage medium[s] [computer readable storage medium]

b) At page 17, claims 1-14,17-22,26-27,29-30, applicant argues that "Sharon does not anticipate the claimed invention because Sharon does not teach binary data structures having the elements as claimed and therefore cold not teach the transfer of such data structure.

c) At page 17, applicant argues that as claimed the "self-descriptive binary data structure includes various features not mention by Sharon. These features include, but are not limited to a pluraltity of data segments where each data segment comprises a header and a data filed.....

As to the above argument [b-c], examiner disagree with the applicant because, firstly Sharon is directed to transferring data from host system to target system [see fig 1, Abstract], particularly, Sharon teaches file format or data structure [page 1, col 2, 0010, line 1-4]; secondly, Sharon teaches "s-records" is defined as "self-descriptive binary data structure" because, typically, "s-records" would have character strings made of several fields which identify the record type, record length, memory address, code, data and like is part of the "s-records" data structure corresponds to self=descriptive binary data structure [page 2, 0016-0019], thirdly, Sharon teaches records holding a description of file or a data containing program code in a specific location or address, further data segment typically one of the section of data or code as detailed in page 2, col 1, 0015. Since applicant has not specified how the amended language distinguishes the claimed invention from Sharon beyond simply asserting that it does without any further support.

Therefore, Applicant's remarks are deemed not to be persuasive, and claims 1-14,17-22,26-27,29-36,38-40 stand rejected under 35 USC 102(e) as being clearly anticipated by Sharon et al.

d) At page 18, claims 15,24,28,37, applicant argues that Sharon in paragraph 0021 and fig 3 describes the iAN files that are clearly not true binary data structure, while Brown does mention converting a segmented non-binary width data structure into a binary memory structure....the combination of Sharon and Brown, therefore, does not result in any of the claimed limitations...

As to the above argument [d], as best understood by the examiner, Sharon teaches "binary data structure" because Sharon specifically suggests "s-records" typically identify the program code or data is in "binary form", further records are converted to another format or data structure referred to an "iAN files", further, examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Sharon is directed to rapid file transfer to embedded system, more specifically transferring data from a host system to a target system that including creating a data record for transmitting data to the target [see Abstract], while Brown is directed to logically expanding the width of memory, more specifically addressing the issues of minimizing memory requirement for storing "non-binary" width data, particularly, data structure [see Brown: Abstract], Sharon also does teaches sequence of data into a memory of the target system particularly related to S-record [see fig 2, page 1, col 2, 0014], also both Sharon, Brown specifically teach "binary data structure [see Sharon: page 2, col 2, 0021, fig 2-3; Brown: col 2, line 33-35], and both Sharon, Brown suggests embedded memory system [see Sharon: page 1, col 2, 0012; Brown: col 1, line 23-25].

Therefore, one of the ordinary skill in the art at the time of applicant's invention to incorporate the teachings of Brown into rapid file transfer to embedded system of

Sharon et al. because both Sharon, Brown specifically directed to "data structures", particularly, users of Sharon's data structure to implement segments physically mapped into binary memory structure, while portion of the non-binary width in the data structure stored in accordance with the requirements of logical row in the first binary memory for example width of the entry is 21-bits, the non-binary data structure stores 16 entries [see Brown: col 2, line 22-32], thus bringing the advantages of minimizing memory requirement for storing "non-binary data structure" as suggested by Brown: [see col 1, line 58-61].

Conclusion

The prior art made of record

a. US Pub.No. . 20030229707

b. US Patent .No. . 6839825

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Srirama Channavajjala whose telephone number is 571-272-4108. The examiner can normally be reached on Monday-Friday from 8:00 AM to 5:30 PM Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alam, Hosain, T, can be reached on (571) 272-3978. The fax phone numbers for the organization where the application or proceeding is assigned is 571-273-8300 Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free)

sc
Patent Examiner.
February 1, 2007

SRIRAMA CHANNAVAJJALA
PRIMARY EXAMINER